A molded product dispenser with a resistant clip adapted to secure the dispenser to another article is provided. The molded product dispenser includes a first and second body portion forming a compartment therebetween from reception of a product such as confection, tablets, mints, pills or the like.
PRODUCT DISPENSER WITH CLIP

BACKGROUND OF THE INVENTION

[0001] 1. Field of the Invention

[0002] The present invention relates generally to a product dispenser. More specifically, and without limitation to the specific embodiments disclosed herein, the invention relates to a product dispenser for confections or tablets including a clip adapted to secure the dispenser to another article.

[0003] 2. Background Art

[0004] Confection and tablet dispensers are sold in many forms. Some dispensers are designed to be compact enough to be carried by the user in a pocket, bag, purse or automobile console. A common type of product dispenser is constructed in the form of a wrapper dispenser, wherein the dispenser tears open to provide access to the contents contained therein. Chewing gum and roll candies are commonly supplied in a wrapper dispenser. The user generally tears away the wrapper to dispense the product contained within a paper or foil wrapper.

[0005] Wrapper dispensers are subject to a number of problems. For example, the dispenser may become crushed inside a purse or pocket. The likelihood of crushing increases when the dispenser is carried in a pocket or purse that also includes a number of other articles. Wrapper dispensers also have the disadvantage of exposing the product to moisture once the integrity of the wrapper is destroyed when the wrapper is torn open to dispense the product. A third, and significant problem, arises when the dispenser is carried in a pocket, bag, purse or vehicle console. A product dispenser can be easily misplaced or difficult to locate among the numerous articles that can be carried in a purse, bag, pocket or automobile console.

[0006] Others have attempted to solve these problems but with limited success. For example, instead of using a wrapper dispenser, some have employed a molded plastic dispenser or a tin container. Although these dispensers address some of the problems mentioned above, they still may be misplaced or difficult to quickly locate. Further, these prior art dispensers are generally more expensive.

SUMMARY OF THE INVENTION

[0007] It is an objective of the present invention to provide a truly new and versatile product dispenser that addresses the deficiencies present in the prior art.

[0008] It is another objective of the present invention to provide a molded product dispenser having a compartment formed for reception of a product therein and a clip integrally formed with portions of the container. In the preferred embodiment, the clip projects from the container and is adapted to secure the container to another object.

[0009] It is another objective of the present invention to provide a process for forming a product dispenser with a compartment formed therein for reception of a product. In an embodiment of the present invention, the container is formed in two parts by injection molding, with one part including an integral clip. The clip is formed by the aid of a mold slide as described more fully herein. After the injection molding, product is placed in a recess created by at least one of the injection molded parts. At least one of the injection molded parts is then treated with a hot plate near its periphery to slightly melt portions of the plastic. The slightly melted plastic of this injection molded part is then brought into contact with the second molded part thereby securing both parts together as the slightly melted plastic solidifies.

[0010] It is yet another objective of the present invention to provide a product dispenser with the ability to attach a clip thereto. In a further embodiment of the present invention, a molded product dispenser includes a tongue ridge integrally formed therewith. The tongue ridge adapted to receive a clip with a groove formed to mate with the tongue ridge. In yet another embodiment of the present invention, a molded product dispenser is adapted for reception by a holder that carries a clip.

BRIEF DESCRIPTION OF THE DRAWINGS

[0011] FIG. 1a is a perspective view of the preferred embodiment of the present invention, having mints shown in phantom.

[0012] FIG. 1b is a perspective view of the preferred embodiment of the present invention illustrating its opened position.

[0013] FIG. 2a is an exploded view of an embodiment of the present invention.

[0014] FIG. 2b is an exploded view of an embodiment of the present invention.

[0015] FIG. 3 is a sectional view of the mold used to form an embodiment of the present invention.

[0016] FIG. 4a is a perspective exploded view of another embodiment of the present invention.

[0017] FIG. 4b is a top plan view of an embodiment of the present invention.

[0018] FIG. 5a is a perspective view of an embodiment of the present invention.

[0019] FIG. 5b is a side view of an embodiment of the invention with a dispenser shown in phantom.

[0020] FIG. 5c is a front view of an embodiment of the invention with a dispenser shown in phantom.

[0021] FIG. 6a is a perspective view of a second embodiment of the present invention.

[0022] FIG. 6b is a perspective view of a second embodiment of the present invention.

[0023] FIG. 7a is a perspective view of a third embodiment of the present invention.

[0024] FIG. 7b is a perspective view of a third embodiment of the present invention.

DETAILED DESCRIPTION

[0025] An apparatus comprising a molded product dispenser is provided. In the following description, numerous specific details are set forth in order to provide a more comprehensive description of the present invention. It will be apparent, however, to one skilled in the art, that the present invention may be practiced without these specific
details. In other instances, specific details of well known features have not been described so as not to obscure the present invention.

[0026] Referring now to the drawings, FIG. 1a illustrates the preferred embodiment of the molded product dispenser 10. Dispenser 10 includes a first body portion 14 and a second body portion 16. First body portion 14 has projection 18 that extends perpendicularly to first body portion 14 and follows the peripheral contour of first body portion 14. First body portion 14 and second body portion 16 are mated to form an enclosure 11 to hold products to be dispensed. FIG. 1a includes the product 9 shown in phantom. It should be appreciated that although mint tablets are shown in FIG. 1a, the present invention may be employed with other types of products.

[0027] Second body portion 16 includes an attachment member such as an integral clip 12, as illustrated in FIG. 1a. Clip 12 extends upward from second body portion 16 by way of a C-shaped structure 13 and then angles back inward towards second body portion 16 by way of arm 15. Structure 13 and arm 15 combine to create a resilient clip 12 that is adapted to secure dispenser 10 to another article. In the preferred embodiment of the invention, clip 12 minimally extends from second body portion 16, creating a narrow profile for product dispenser 10.

[0028] Clip 12 is adapted to releasably grasp another object and may include a curved terminal portion 17 to aid in the attachment of dispenser 10 to another object. Clip 12 approaches second body portion 16 near the terminal end of clip 12 to facilitate securing the dispenser to another object and to prevent accidental release of dispenser 10 from the object. Clip 12 is preferably flexible enough to grasp articles of varying thicknesses and resilient enough to prevent accidental release or breakage. Second body portion 16 and clip 12 are preferably constructed from a plastic material to be described in more detail later herein.

[0029] Dispenser 10 holds a product to be dispensed by the user through lid 20, shown in FIG. 1a in the closed position. Lid 20 preferably is integrally formed with molded first body portion 14. FIG. 1b depicts lid 20 of dispenser 10 in an open position for dispensing a product from enclosure 11. Lid 20 is integrally formed and connected to first body portion 14 by living hinge 22. Living hinge 22 is created preferably by locally reducing the material thickness of the first body portion 14 in a line that creates the axis of rotation for lid 20.

[0030] Lid 20 can be secured in the closed position using contoured projections 28 formed on lid 20 and mating locking formations 24 integrally formed with the second body portion 16. When closing lid 20, contoured projections 28 contact the mating locking formations 24 and are forced slightly outward. As the contoured projections 28 move past the locking formations 24, the contoured projections 28 resiliently engage lid 20 with second body portion 16. This mating arrangement can be overcome with force applied by the user when opening lid 20. To open lid 20, the user forces contoured projections to bend outward to allow lid 20 movement past the locking formations 24. This arrangement allows the user easy access to the product and a convenient closure to secure the product for storage.

[0031] The present invention may be used to hold any product, preferably, these products include candies, mints, pills, or tablets. Product may be dispensed by the user while dispenser 10 is secured by clip 12 to another article or while dispenser 10 is freely held by the user. Clip 12 allows the user to easily find and access dispenser 10 by securing dispenser 10 to another article. Examples of such articles include, but are not limited to, a user's clothing belt, or pocket, or an automobile interior such as a visor, storage console, or glove compartment. Dispenser 10 may also be secured to a carrying case such as a briefcase, purse, athletic bag, or other device for transporting articles to enable the user to readily access the dispenser.

[0032] FIG. 2a illustrates an embodiment of the invention wherein dispenser 30 is constructed from a single molded form. FIG. 2a illustrates the interior of dispenser 30 with living hinge 32 interconnecting first body portion 34 and second body portion 36. First body portion 34 and second body portion 36 can be folded together using living hinge 32 to form enclosure 33 in dispenser 30. Living hinge 32 functions similarly to living hinge 22 described in FIG. 1b. Snap closures 38 may be used to mate first body portion 34 and second body portion 36. Alternatively, first body portion 34 can be joined to the second body portion 36 by use of a unique and effective heating operation. A heat plate can be utilized to locally melt plastic at the periphery 39 of one of both of the body portions 34, 36 preferably after product is placed in recess 35 created by one of the body portions. After a heat plate is applied to periphery 39, the body portions 34 and 36 are folded about living hinge 32. The locally melted plastic is then allowed to solidify, creating an enclosure between body portions 34 and 36. As described in the previous embodiment, the product contained in enclosure 33 is accessible through lid 40. Importantly, if the heat plate operation is utilized, the heat plate is not applied to the periphery used by the lid 40. As noted above, the perimeter of lid 40 remains free from solidification, allowing product to be dispensed when lid 40 is opened using living hinge 42. An integral clip may also be formed with the single molded embodiment of the invention illustrated in FIG. 2a, preferably on the second body portion 36 to allow dispensing of the product while container 30 is secured to another object. This operation is discussed in more detail in reference to FIG. 3.

[0033] FIG. 2b illustrates product dispenser 50 constructed from separately molded first body portion 52 and second body portion 54. In the embodiment illustrated in FIG. 2b, the first body portion has lid 56 with living hinge 58. The second body portion 54 comprises integral clip 60 and snap lock 62. The enclosure of dispenser 50 is formed with snap closures 64 (mating components not shown) joining first body portion 52 to second body portion 54. Alternatively, the enclosure is formed by mating first body portion 53 to second body portion 54 with a heat plate operation around portions of the perimeter 49 of the dispenser 50.

[0034] Body portions can be formed by a molding process, preferably an injection molding process wherein a heated thermoplastic polymer is injected into a cavity of a mold thereby forming a unitary component. FIG. 3 illustrates mold 70 used for injection molding a unitary product dispenser with first body portion (not shown) and second body portion 74 with integral clip 76, and living hinge (not
shown). The second body portion 74 includes a stand to ensure the integrity of the enclosure formed between the body portions.

Mold 70 is injected through nozzle 80 to form a single piece product dispenser. To create an integral clip described above, a mold slide 72 is utilized. Mold slide 72 is disposed between the mold location for the body portion 74 and the clip 75. Mold slide 72 is adapted to translate along the place of the body portion 74 (in and out of the plane of FIG. 3). During the injection of a thermoplastic polymer, mold slide 72 is disposed directly between clip 75 and body portion 74. After the mold process is complete, mold slide 72 translates such that the slide is laterally offset from clip 75 allowing for the dispenser to be removed from mold 70. Body portion 74 is preferably molded with a second body portion 76 connected thereto by a living hinge 78.

FIG. 4a illustrates an embodiment of the invention wherein dispenser 90 is selectively engageable with a clip structure 92. Dispenser 90 may be formed from a first body portion mated to a second body portion to form a compartment for reception of a product when mated as described herein. Dispenser 90 and clip structure 92 form an interlocking mechanism with the tongue ridge 94 on second body portion 96 of dispenser 90 and slot 98 in clip structure 92. Tongue ridge 94 projects from body portion 96 and forms a T-shaped structure. Clip structure 92 includes a planar base portion 93 and a clip arm portion 95 interconnected by a C-shaped formation 97 such that arm 95 folds back onto base 93. Clip structure 92 includes a slot 98 formed therein. Slot 98 begins on the planar base portion 93 and extends through at least portions of C-shaped formation 97. It should be noted that slot 98 extends into C-shaped formation 97 to allow for easy insertion of tongue ridge 94 into slot 98. Slot 98 may be of diminishing width to ensure that the engagement of tongue ridge 94 by slot 98 is sufficiently tight to allow exchange of dispenser 90 by the user but prevent accidental release of dispenser 90 from clip 92. Clip 92 is adapted to allow dispenser 90 to be secured to another object as described in detail for clip 12 of dispenser 10. It should also be appreciated that clip 92 may be formed from plastic or other materials such as steel.

FIG. 4b illustrates a top view of the dispenser 90 with tongue ridge 94 and clip structure 92 with slot 98 adapted for reception of tongue ridge 94. It should be appreciated that tongue ridge and slot arrangement for slidably connecting the dispenser to the clip may be of any shape that allows the slot to tightly receive the tongue ridge.

FIGS. 5a, 5b, and 5c illustrate an embodiment of the invention wherein dispenser 110 is held by a clip holder 112. Clip holder 112 tightly receives dispenser 110 to allow the user to secure dispenser 110 to another article. Clip holder 112 comprises clip 114 integrally formed with vertical member 116 parallel with the integral clip 114, base 118 perpendicular to the vertical member 116, horizontally extending out from vertical member 116 for the width of the container 110, and curvilinear arms 120 extending horizontally from vertical member 116 to hold the container 110 securely against the vertical member 116. It should be appreciated that curvilinear arms 120 limit movement of the dispenser 110 vertically. It should also be noted that dispenser 110 is tightly received in holder 112 to create engagement between holder 112 and dispenser 110. Tightly receiving the dispenser with the holder can be accomplished in a number of ways. For example, the curvilinear arms 120 could be forced outward during reception of dispenser 110. This creates a resilient or return force upon the dispenser 110 that acts to maintain the engagement between holder 112 and dispenser 110. Another method could be to provide a button like projection on, for example, the dispenser 110 and a mating depression on the holder 112. The mating of the depression and button projection will act to maintain engagement between holder 112 and dispenser 110. It should be appreciated that many other equivalent methods of tightly receiving the dispenser in the holder are known in the art.

FIGS. 6a and 6b illustrate an embodiment of the invention similar to dispenser 10 in FIGS. 1a and 1b. Dispenser 130 comprises integral clip 132 and differs from dispenser 10 by having sliding lid 134 to allow the user to dispense the product from the enclosure 133 formed therein. Sliding lid 134 operates by sliding parallel to one edge of dispenser 130. Sliding lid 134 comprises protruding parallel ridges extending lengthwise thereon. The ridges are tightly received in a channel formed in first body portion 136 and a parallel channel formed in second body portion 138. A protrusion (not shown) in sliding lid 134 allows the user to slide lid 134 along dispenser 130 until sliding lid 134 is stopped by contact between the protrusion and body portion 140. It should be appreciated that the opening created by sliding lid 134 is large enough to dispense product enclosed therein. FIG. 6b shows the sliding lid 134 in the open position for dispensing products.

FIGS. 7a and 7b show another embodiment of the invention wherein the dispenser 150 comprises first body portion 152 and second body portion 154 with integral clip 155. The second body portion 154 includes a planar surface 155 having a raised continuous periphery 153 to form a repository for the product to be dispensed. The first end 157 of the second body portion 154 protrudes along the peripheral contour of second body portion 154 to form tab stop 156 to cooperate the closure of the first body portion 152. First body portion 152 has generally the same shape as the second body portion, a planar surface 161 with opposite side walls 163. Side walls 163 extend perpendicularly from the planar surface 161 on opposite sides of the raised periphery 153 of first body portion 152 leaving the ends of first body portion 152 open. The sides 158 of first body portion 152 extend and curve around the corner of the second end 165 of first body portion 152 to form stop tabs 160. Side edges 158 preferably contain perpendicular ridges to glide along grooves in second body portion 154. First body portion 152 and second body portion 154 slide together to engage a compartment from which products are dispensed by the user.

In another embodiment of the invention, the compartment formed in the product dispenser may be divided into sub compartments, each sub compartment having a separate lid to allow the user to dispense multiple products from one dispenser. The sub compartments may be formed during the molding process and may be molded into the first body portion parallel to the projections on at least one side of the first body portion. The projections forming the sub compartments extend perpendicularly from the planar surface of the first body portion to the same distance as the projections on the peripheral contour of the first body
portion. Each lid for a sub compartment may be integrally formed with the second body portion. Each lid operates by a living hinge as described for dispenser 10.

[0042] The foregoing description constitutes the preferred embodiments devised by the inventors for practicing the invention. It is apparent, however, that the invention is susceptible to modification, variation and change that will be obvious to those skilled in the art. Inasmuch as the foregoing description is intended to enable one skilled in the pertinent art to practice the invention, it should not be construed to be limited thereby but should be construed to include such aforementioned obvious variations and be limited only by the proper scope and fair meaning of the accompanying claims.

What is claimed is:

1. A product dispenser with a compartment formed therein for reception of a product comprising:

   a molded container having a first body portion with a projection extending along portions of the periphery of said first body portion and a second body portion configured to mate with said first body portion to form a compartment therein; and

   an attachment member integrally formed with said container, said attachment member projecting therefrom and adapted to secure said container to another object.

2. The invention as set forth in claim 1, wherein said attachment member is a clip.

3. The invention as set forth in claim 1, wherein said attachment member is a ridge adaptable to secure a clip thereto.

4. The invention as set forth in claim 1, wherein said clip includes a C-shaped formation and an arm extending therefrom, said arm being disposed substantially parallel with and towards said container.

5. The invention as set forth in claim 1, wherein said first body portion further comprises a lid having a peripheral contour adapted to mate with said second body portion to allow for the dispensing of a product contained therein.

6. The invention as set forth in claim 3, wherein said lid further comprises at least one snap formation carried by said second body portion and adapted to cooperate with said peripheral contour for closure of said lid.

7. The invention as set forth in claim 1, wherein said second body portion is slingly engaged with said first body portion to allow access to said compartment, said second body portion and said first body portions having a mating ridge and slot formed therein adapted to slidingly engage said second body portion and said first body portion.

8. The invention as set forth in claim 1, wherein said compartment is subdivided to create at least two subcompartments.

9. The invention as set forth in claim 1, wherein said product is a plurality of mint tablets.

10. A process for forming a product dispenser with a compartment formed therein for reception of a product comprising:

     injection molding a first body portion with a projection; injection molding a second body portion such that it includes attachment member formed therewith;

     employing a mold slide disposed between said second body portion and said attachment member to provide removal from said injection mold;

     placing a product to be dispensed in contact with said first body portion;

     mating said first body portion with said second body portion thereby creating a compartment and enclosing said product to be dispensed therein.

11. The invention as set forth in claim 10, wherein said attachment member is a clip.

12. The invention as set forth in claim 10, wherein said attachment member is a ridge adaptable to secure a clip thereto.

13. The invention as set forth in claim 10, wherein said mating said first body portion with said second body portion comprises using a heating operation on portions of said projections of said first body.

14. The invention as set forth in claim 10, wherein said mating said first body portion with said second body portion comprises using a heat plate operation on portions of said second body portion.

15. The invention as set forth in claim 10, further comprising the step of forming at least one lid on one of said first or second body portions, said at least one lid having a matching peripheral contour on the other of said first or second body portions.

16. The invention as set forth in claim 10, wherein said mating said first body portion with said second body portion are snapped together without the aid of an adhesive or weld.

17. The invention as set forth in claim 10, wherein said first body portion and said second body portion are formed as one component, said first body portion and said second body portion being interconnected by a living hinge and wherein said mating said first body portion with said second body portion includes articulating one of said first or second body portions about said living hinge.

18. The invention as set forth in claim 13 further comprising dividing said compartment into a plurality of subcompartments.

19. The invention as set forth in claim 13, wherein said mating said first body portion with said second body portion includes creating a sliding engagement between said first and second body portions for dispensing a product contained therein.

20. An apparatus for holding a product dispenser with a compartment formed therein for reception of a product comprising:

     an attachment member removably attached to said product dispenser, said attachment member having a slot formed therein for tightly receiving said dispenser.

21. The invention as set forth in claim 20, wherein said attachment member includes a resilient clip, laterally spaced arms to limit lateral and horizontal movement of said dispenser and form said slot, and a bottom ledge to limit vertical movement of said dispenser, said arms formed to tightly receive said product dispenser.

22. The invention as set forth in claim 20, wherein said holder includes a main body portion, said arms project from said main body portion, said ledge projects from said main body portion, said main body portion extending over half the length of the product dispenser being held by said apparatus.

23. The invention as set forth in claim 21, wherein said main body portion includes said ledge projections of end
thereof and said clip originating from the opposed end of said main body portion, said clip extending towards said ledge adjacent in close proximity to said main body portion.

24. The invention as set forth in claim 20, wherein said holder includes a projection to cooperate with a mating depression in the product dispenser being held to impede vertical movement of the dispenser with respect to said holder.

25. The invention as set forth in claim 20, wherein said attachment member includes a base portion with a clip attached thereto, said planar portion including said slot, said slot adapted to cooperate with a ridge projecting from said dispenser to secure said attachment member with said dispenser.

26. The invention as set forth in claim 25, wherein said projection is a T-shaped ridge and slot said includes a larger opening on a distal end thereof to facilitate securing said attachment member to said dispenser.

27. A process for forming a product dispenser with a compartment formed therein for reception of a product comprising:

- injection molding a body portion having a periphery, said body portion including a living hinge formed through defining a first and second body portion;
- placing a product to be dispensed in contact with one of said first or second body portion;
- applying a heat plate operation about portions of said periphery;
- articulating one of said first or second body portions about said living hinge and in contact with the other of said first or second body portions;
- joining portions of said periphery by contacting portions of said body portion with itself by virtue of said contact and said heat plate operation and enclosing said product to be dispensed therein.

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